

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-9-4

Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

MITSUBISHI MOTORS CORPORATION

Pursuant to the authority vested in the Air Resources Board by Sections 43000.5, 43013 and 43018 of the Health and Safety Code; and,

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following Mitsubishi Motors Corporation 1997 model-year engine, with rated power between 175 and 750 horsepower, and exhaust emission control systems are certified as described below for use in heavy-duty off-road equipment:

Typical Equipment Usage: Rough Terrain Crane

Fuel Type: Diesel

<u>Engine Family</u>	<u>Liters (Cubic Inches)</u>	<u>Exhaust Emission Control Systems and Special Features</u>
VMT460R6DARA	7.5 (460)	Turbocharger Charge Air Cooler

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM) certification exhaust emission standards, in grams per brake horsepower-hour (g/bhp-hr), and the opacity of smoke emission standards, in percent (%), during acceleration (Accel), lugging (Lug), and peak (Peak) modes, for this engine family are (Title 13, California Code of Regulations, Section 2423):

<u>Exhaust Emissions (g/bhp-hp)</u>				<u>Smoke Opaciity (%)</u>		
<u>THC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
1.0	8.5	6.9	0.4	20	15	50

The THC, CO, NOx and PM exhaust emission certification values, in g/bhp-hr, and the opacity of smoke emission certification values, in percent (%), for this engine family are:

<u>Exhaust Emissions (g/bhp-hr)</u>				<u>Smoke Opacity (%)</u>		
<u>THC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
0.6	0.7	6.1	0.2	14	2	28

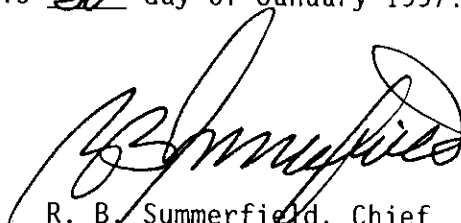
BE IT FURTHER RESOLVED: That the listed engine models comply with the "Exhaust Emission Standards and Test Procedures--Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with the "Emission Control Labels--1996 and Later Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Section 2425 et seq.).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this 30<sup>th</sup> day of January 1997.



R. B. Summerfield, Chief  
 Mobile Source Operations Division

1997 MODEL-YEAR AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
HEAVY-DUTY OFF-ROAD DIESEL ENGINES

E.O.# U-R-9-4

Manufacturer: Mitsubishi Motors Corporation Engine Family: VMT460R6DARA  
Displacement: 7.5 / 460 Liters/Cubic Inches Eng Config: I6/OHV  
All Eng Codes in Eng Family: CA 49 505 xx Cert Test Procedures: AR3 xx EPA       
Valves/Ports per Cylinder: 2 valves/cyl Strokes per Combustion Cycle: 4-stroke  
Maximum Rated Power: 247 HP ( 184 KW) @ 2,800 RPM  
Ignition: Compression      Compression with Glow Plug xx Spark       
Fuel Type(s): Dedicated X Flex-Fuel      Dual-Fuel      Diesel xx M100      M85       
CNG      LNG      LPG      Other(specify)       
Diesel Cert Fuel: 40 CFR 86.1313-94 xx Other(specify)       
Primary Service Equipment: Rough Terrain Crane  
Exhaust ECS (e.g., OC, EGR, PTOX, IFI, TC, CAC): TC, CAC  
(Use abbreviations per SAE J1930 JUN93)

Engine Model (Eng Code)	Rated HP @ RPM	Fuel Rate @ Rated HP mm <sup>3</sup> / stroke (lbs/hr)	Fuel Pump & Injector Part No.	ECM/PCM Part No.	EGR Valve Part No.	PTOX / Catalytic Converter Part No.
6D16TLEA-US97	247 HP 2,800 rpm	101 mm <sup>3</sup> /st (95.4 lbs/hr)	I/P ME078397 I/N ME078066	N/A	N/A	N/A

Date Issued:     

Revisions:     

I/P : Fuel Injection Pump

I/N : Fuel Injection Nozzle